

WHAT IS CLAIMED IS:

1. A thin-film magnetic head comprising:
a lower core layer;
a gap layer formed directly on the lower core layer or
on a lower magnetic pole layer provided on the lower core
layer; and
an upper core layer formed directly on the gap layer or
on an upper magnetic pole layer defining a track width
provided on the gap layer;

wherein the gap layer comprises NiP, the P content of
the NiP being in the range of 11 mass percent to 14 mass
percent.

2. A thin-film magnetic head according to claim 1,
wherein the P content is in the range of 12.5 mass percent
to 14 mass percent.

3. A method for making a thin-film magnetic head
comprising a lower core layer comprising a magnetic material
and an upper core layer comprising a magnetic material
opposing the lower core layer provided with a gap layer
therebetween, the method comprising the steps of:

- (a) forming the lower core layer by plating;
- (b) forming the gap layer directly on the lower core
layer, or forming a lower magnetic pole layer on the lower
core layer and then the gap layer on the lower magnetic pole

layer by plating; and

(c) forming the upper core layer directly on the gap layer or forming an upper magnetic pole layer on the gap layer and then the upper core layer on the upper magnetic pole layer by plating;

wherein the gap layer is formed using NiP having a P content in the range of 11 mass percent to 14 mass percent.

4. A method for making a thin-film magnetic head according to claim 3, wherein the P content of the NiP is in the range of 12.5 mass percent to 14 mass percent.

5. A method for making a thin-film magnetic head according to claim 3, wherein at least the lower magnetic pole layer is formed by an electrolytic plating process using a pulsed current.

6. A method for making a thin-film magnetic head according to claim 4, wherein at least the lower magnetic pole layer is formed by an electrolytic plating process using a pulsed current.